

WEST

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L2: Entry 1 of 1

File: DWPI

Dec 1, 1998

DERWENT-ACC-NO: 1996-288644

DERWENT-WEEK: 200032

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TITLE: Electric power steering appts. for vehicle - uses
microcomputer to calculate speed and acceleration of drive motor
to provide compensation to motor drive for steering friction and
moment of inertia

INVENTOR: KIFUKU, T; WADA, S

PATENT-ASSIGNEE:

ASSIGNEE	CODE
MITSUBISHI DENKI KK	MITQ
MITSUBISHI ELECTRIC CORP	MITQ

PRIORITY-DATA:

1994JP-0318350

December 21, 1994

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
KR 161771 B1	December 1, 1998	N/A	000	B62D006/08
EP 718174 A2	June 26, 1996	E	041	B62D006/08
JP 08175404 A	July 9, 1996	N/A	024	B62D005/04
EP 718174 A3	January 15, 1997	N/A	000	B62D006/08
US 5740040 A	April 14, 1998	N/A	037	B62D005/04

DESIGNATED-STATES: DE FR GB

CITED-DOCUMENTS: No-SR.Pub; 2.Jnl.Ref ; DE 19510394 ; JP 04008190
; JP 04008666

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-NO
KR 161771B1	December 19, 1995	1995KR-0051791	N/A
EP 718174A2	November 30, 1995	1995EP-0118862	N/A
JP 08175404A	December 21, 1994	<u>1994JP-0318350</u>	N/A
EP 718174A3	November 30, 1995	1995EP-0118862	N/A
US 5740040A	November 28, 1995	1995US-0563585	N/A

INT-CL (IPC): B62D 5/04; B62D 6/00; B62D 6/08; B62D 101/00; B62D

113/00; B62D 153/00; B62D 153/00; H02P 5/06

ABSTRACTED-PUB-NO: EP 718174A

BASIC-ABSTRACT:

The output of a torque sensor (2) is input to an A/D converter (8f) for DC amplification and phase compensation. The output of a vehicle speed sensor (3) is input to the converter. Current to the motor (1) is converted to a voltage by a resistor (4a) in a current detection circuit (4) comprising a sample/hold circuit (4b) for sampling the voltage during power running time, holding it during regenerative running and amplifying the held voltage in an amplification circuit (4c).

The voltage detection circuit removes the square component in the motor applied voltage in association with the PWM drive and inputs the resultant component to the converter. A motor angular velocity is estimated from which the motor acceleration is estimated using a differential calculator. The steering friction and the moment of inertia

are compensated by the controller using the angular velocity and acceleration.

ADVANTAGE - Eliminates the problems relating to steering wheel turn, viscous and inertial feeling to improve the feeling of the steering.

ABSTRACTED-PUB-NO:

US 5740040A

EQUIVALENT-ABSTRACTS:

The output of a torque sensor (2) is input to an A/D converter (8f) for DC amplification and phase compensation. The output of a vehicle speed sensor (3) is input to the converter. Current to the motor (1) is converted to a voltage by a resistor (4a) in a current detection circuit (4) comprising a sample/hold circuit (4b) for sampling the voltage during power running time, holding it during regenerative running and amplifying the held voltage in an amplification circuit (4c).

The voltage detection circuit removes the square component in the motor applied voltage in association with the PWM drive and inputs the resultant component to the converter. A motor angular velocity is estimated from which the motor acceleration is estimated using a differential calculator. The steering friction and the moment of inertia are compensated by the controller using the angular velocity and acceleration.

ADVANTAGE - Eliminates the problems relating to steering wheel turn, viscous and inertial feeling to improve the feeling of the steering.

CHOSEN-DRAWING: Dwg.1/44 Dwg.1/44

TITLE-TERMS: ELECTRIC POWER STEER APPARATUS VEHICLE MICROCOMPUTER
CALCULATE SPEED ACCELERATE DRIVE MOTOR COMPENSATE MOTOR DRIVE
STEER FRICTION MOMENT INERTIA

DERWENT-CLASS: Q22 T01 V06 X22

EPI-CODES: T01-J07C; V06-N02; X22-C05A;

SECONDARY-ACC-NO:

Non-CPI Secondary Accession Numbers: N1996-242293